

## **REMARKS**

Claims 1 and 7 are pending and stand rejected. By the above amendment, claims 1 and 7 have been amended. Reconsideration of the claim rejections is respectfully requested in view of the above amendments and following remarks.

### **Claim Rejections Under 35 U.S.C. §112**

Claims 1 and 7 stand rejected under 35 U.S.C. §112, second paragraph, for the reasons set forth on page 2 of the Office Action. Although Applicants respectfully disagree with the rejection, claims 1 and 7 have been amended to recite essentially that the “resistivity” of the edge ring is less than the resistivity of a silicon wafer. Claims 1 and 7 are thus believed to be clear and definite and withdrawal of the rejection is respectfully requested.

### **Claim Rejections Under 35 U.S.C. §103**

Claims 1 and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over applicants’ admitted prior art (AAPR) in view of U.S. Patent No. 6,074,488 to Roderick et al. (“Roderick”) and further in view of U.S. Patent No. 6,284,093 to Ke et al. (“Ke”). It is respectfully submitted that the combination of AAPR, Roderick and Ke is legally deficient to establish a *prima facie* case of obviousness against claims 1 and 7.

To begin, Examiner relies on AAPR, FIG. 2 of Applicants’ specification contending that the slanted step portion of FIG. 2 appears to have the same angle as in the invention depicted in FIG. 4. Applicants respectfully submit that Examiner’s reliance on the cited AAPR is *clearly misplaced* because FIGs. 2 and 4 are merely schematic (not to scale) illustrations and the differences in the slopes/angles are explained on page 6, lines 7-18 of Applicants’ specification. Accordingly, the cited AAPR clearly does not disclose

or suggest an *edge ring that comprises a slanted step portion whose surface forms an angle in a range of about more than 55 to about 80 degrees relative to a normal to a wafer surface*, as essentially claimed in claims 1 and 7.

Moreover, as noted in previous responses, although Ke discloses an elevated collar (30) (see Figs 2 and 3, for example) having an angle in the range of 20-55 degrees relative to a normal of the wafer surface (i.e., a 110-145 degree obtuse angle relative to the surface of the wafer) (see, e.g., Col. 18, lines 13-33), Ke discloses that a more preferred range is 30-45 degrees and that a 45 angle is preferred because it maximizes horizontal scattering (Col. 18, lines 43-45). In fact, Ke discloses that the angle may be closer to 90 degrees (vertical) relative to the surface of the wafer (see, Col. 18, lines 43-50). However, there is nothing in Ke that discloses or remotely suggests an angle in the range of more than 55 degrees to 80 degrees, as claimed in claims 1 and 7. Without more, Examiner cannot simply dismiss this issue on the grounds of “routine experimentation”, especially when Ke teaches against the claimed ranges.

Moreover, Applicants respectfully disagree that Ke teaches or suggests that *the slanted step portion of the edge ring begins from about 1.5 to about 4.5 mm (or about 1.5 to about 2.5 mm) from the edge portion of the wafer to be etched*, as essentially claimed in claims 1 and 7, respectively. Indeed, Examiner relies on the spacing “S” as depicted in Fig. 4 of Ke (and the cited section Col. 11, lines 33-35), wherein the spacing “S” denotes the distance between about the center of the slanted portion (32) of the collar (30) and the outer edge of the non-dielectric protective ring (50).

However, the spacing “S” as disclosed by Ke is a different parameter than the distance between the beginning of the *slanted step portion of the edge ring to the edge*

*portion of the wafer to be etched* (see, e.g., the distance, "l" depicted in FIG. 4 of Applicants' specification). The current Office Action fails to address or acknowledge this apparent difference, despite that fact that Applicants raised this issue in the previous Amendment. Therefore, Examiner's summary dismissal of this issue as being a "matter of routine experimentation" is unpersuasive given the fact the parameters "S" and "l" are different, and that there is simply nothing in Ke that discloses or suggest the claimed ranges.

For at least the above reasons, the combination of AAPR, Roderick and Ke does not disclose or suggest claimed features of claims 1 and 7. Accordingly, claims 1 and 7 are believed to be patentable over the cited combination. Therefore, withdrawal of the obviousness rejections is respectfully requested. Applicants request favorable consideration of the application as now presented.

Respectfully submitted,



Frank DeRosa  
Reg. No. 43,584  
Attorney for Applicant

F. Chau & Associates, LLC  
130 Woodbury Road  
Woodbury, New York 11797  
TEL.: (516) 692-8888  
FAX: (516) 692-8889